News Release

U.S. Department of Labor
Office of Public Affairs
Washington, D.C.
Release Number 06-1458-NAT

For Immediate Release
August 16, 2006
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MSHA Approves Proximity Detection System for Mining Industry

Agency, Partners Demonstrate System for Continuous Miners

SHINNSTON, W.Va. – The U.S. Department of Labor's Mine Safety and Health Administration (MSHA), in partnership with a coal mine operator and three companies that manufacture and repair mine machinery, today demonstrated an agency-approved proximity detection system for remote control continuous mining machines. The demonstration took place at a maintenance facility in Shinnston, W.Va.

Proximity detection systems provide automatic proximity detection and machine shutdown to guard against mine personnel being run over, crushed or pinned when they are positioned in a hazardous area close to the machine. The partnership between MSHA, Nautilus International, Massey Energy Co., Joy Manufacturing and Shinnston-based Repair King Inc., was formed in an effort to address accidents associated with the use of remote control continuous mining machines.

"Since remote controls first came into prominent use in the 1980s, there have been 29 fatal accidents related to the use of remote-control continuous mining machines," said David G. Dye, acting administrator for MSHA.
"The very existence of this system demonstrates what can be achieved when the different segments of the mining industry – the mining *community* – come together to work together as partners to advance safety and health in our nation's mines."

MSHA first began analyzing proximity detection systems in 2002. A review of existing systems found that only Canadian-based Nautilus International had a suitable detection system worth pursuing. The first underground field test of the system took place the following year at Massey Energy's Rockhouse Energy Mine and has since undergone five additional field tests.

The Nautilus system consists of a belt pack unit that identifies the location of the person wearing it, along with machine-mounted electro-magnetic antennae, electronics microprocessor and warning light. The system will become disabled when the cutter motors are running, because there are times during the cutting and loading phase that the operator needs to get close to the machine.

The system also is capable of giving the operator an audio/visual warning when entering a protection zone before the machine shuts down. Additional personnel may be protected if they are wearing a portable protection unit. The Nautilus system received MSHA approval in July 2006. Six months earlier, a system developed by Geosteering Mining Services became the first proximity system to receive MSHA approval.

Continuous mining machines are mobile units consisting of a cylindrical cutting head that constantly extracts coal from the seam and loads it onto conveyors. Remote-controlled continuous miners are used to work in a variety of difficult seams and conditions.

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